CLAIMS

What is Claimed Is:

1. In a data communications architecture, a method to detect errors in data communications comprising:

calculating a disparity for data being communicated by a serializer;

calculating a serializer data communication error code based on the calculated disparity;

communicating data between the serializer and a deserializer;

calculating a disparity on communicated data received by the deserializer to generate a deserializer data communication error code; and

comparing the value of the serializer data communication error code with the value of the deserializer data communication error code.

2. The method as recited in claim 1 further comprising determining whether the value of the serializer data communication error code equals the value of the deserializer data communication error code.

3. The method as recited in claim 2 wherein upon determining the serializer data communication error code value corresponds to the deserializer data communication error code value continuing data communications.

4. The method as recited in claim 2 wherein upon determining that the values of the serializer data communication error code and the deserializer data communication error code are not equal sending a control signal from the deserializer to the serializer.

5. The method as recited in claim 4 wherein upon receiving a control signal by the serializer, the serializer cooperating with a data buffer to obtain data for re-communication to the deserializer.

6. The method as recited in claim 1 further comprising communicating the serializer data communications error code by the serializer to the deserializer.

7. The method as recited in claim 6 further comprising encoding the serializer data communications error code by the serializer to have a specified number of bits for processing by the deserializer.

8. The method as recited in claim 7, further comprising encoding the serializer data communications error code into a packet of data having n bits, wherein n is a value dependent on the number of communications channels employed by the serializer and the deserializer when performing data communications operations.

9. The method as recited in claim 7 further comprising encoding the serializer data communications error code into a ten bit packet.

10. The method as recited in claim 9 further comprising encoding a five bit error code twice to generate a ten bit packet.

11. A computer readable medium having computer readable instructions to instruct a computer to perform a method comprising:

calculating a disparity for data being communicated by a serializer;

calculating a serializer data communication error code based on the calculated disparity;

communicating data between the serializer and a deserializer;

calculating a disparity on communicated data received by the deserializer to generate a deserializer data communication error code; and

comparing the value of the serializer data communication error code with the value of the deserializer data communication error code.

12. A system to detect errant data communicated across a data communications architecture comprising:

a serializer receiving data and calculating a disparity for the data;

a deserializer cooperating with the serializer to receive data and the calculated disparity; and

an error code based on the disparity calculated by the serializer identifying errant data being communicated between the serializer and the deserializer.

13. The system as recited in claim 12 wherein the error code is calculated by the serializer and communicated to the deserializer.

14. The system as recited in claim 13 wherein the error code is communicated by the serializer to the deserializer over a dedicated control channel.

15. The system as recited in claim 12 wherein the error code is calculated by the deserializer based on a calculated disparity calculated using values from the data being communicated by the serializer to the deserializer.

16. The system as recited in claim 12 wherein the error code is calculated and communicated by the serializer when communicating data to the deserializer and calculated again by the deserializer upon receiving data from the serializer.

17. The system as recited in claim 16 wherein the communicated error code and the deserializer calculated error code are compared to determine if they are equal.

18. The system as recited in claim 17 wherein upon determining that the communicated error code and the deserializer calculated error code are not equal sending a control signal from the deserializer to the serializer requesting the serializer to resend data.

19. The system as recited in claim 18 further comprising a data buffer storing data for communication and re-communication.

20. The system as recited in claim 19 wherein the data buffer stores data for encoding by the serializer.

21. A method to detect errant data being communicated across a data communications architecture comprising:

obtaining packets of data for communication between two components;

calculating a disparity value for the data packets;

encoding the disparity value as an n bit error code;

communicating the data and the n bit error code from a transmitting to a receiving component;

re-calculating the disparity and recoding the error code at the receiving component; and

comparing the recoded error code with the encoded error code to identify a discrepancy,

wherein if a discrepancy is observed then determining that there is errant data communicated from the transmitting to the receiving component of the data communications architecture.

22. The method as recited in claim 21 further comprising sending a control signal from the receiving component to the transmitting component requesting the transmitting component resend the data.

23. The method as recited in claim 21 further comprising setting n to a value of five.

24. A mechanism for use in a data communications architecture so as to detect errant data bits comprising:

first means for calculating an error code for a block of data packets based on a calculated disparity of the bits of data;

second means for communicating the error code and block of data packets from a serializer to a deserializer; and

third means to recalculate the error code at the deserializer to compare the calculated and recalculated error codes.